

## Reagent

### 1. Complex media:

#### 1. Luria-Bertani Medium (LB)

1. Weight components

NaCl	10 g/L
Tryptone	10 g/L
Yeast extract	5 g/L
(12 g/L agar for plates)	
2. Fill up to 1 L with deionized water.
3. Mix well by shaking.
4. Sterilize in autoclave at 121°C for 20 minutes. for plates, wait until you can touch the bottle (<60°C, clean bench!).

#### 2. Super Optimal broth with Catabolite repression medium (SOC)

1. Components

yeast extract	0.5%
tryptone	2%
NaCl	10 mM
KCl	2.5 mM
MgSO <sub>4</sub>	20 mM
2. Fill up with deionized water.
3. Adjust PH to 7.5 with NaOH.
4. After autoclaving, add 20 mM sterile glucose solution (filter sterilization).

#### 3. Magnetic Spirillum growth medium(MSGM)

1. Components (1L)

NH <sub>4</sub> Cl	0.4g
Yeast extract	0.1g
MgSO <sub>4</sub> ·7H <sub>2</sub> O	0.1g
Mineral solution	5mL
Sodium thioglycolate	0.05g
0.01M Ferric citrate	2mL
K <sub>2</sub> HPO <sub>4</sub>	0.5g
Sodium lactate (80%)	2.6g
2. Sterilize in autoclave at 121°C for 20 minutes.

\*Mineral solution:

- 1) Components (1L)

Nitritotriacetic acid	1.5g
ZnSO <sub>4</sub> ·7H <sub>2</sub> O	0.18g
MgSO <sub>4</sub> ·7H <sub>2</sub> O	3g
CuSO <sub>4</sub> ·5H <sub>2</sub> O	0.01g
MnSO <sub>4</sub> ·2H <sub>2</sub> O	0.5g
KAl(SO <sub>4</sub> ) <sub>2</sub> ·12H <sub>2</sub> O	0.02g
NaCl	1g
H <sub>3</sub> BO <sub>4</sub>	0.01g

FeSO <sub>4</sub> ·7H <sub>2</sub> O	0.1g
Na <sub>2</sub> MoO <sub>4</sub> ·2H <sub>2</sub> O	0.01g
CoSO <sub>4</sub> ·7H <sub>2</sub> O	0.18g
NiCl <sub>2</sub> ·6H <sub>2</sub> O	0.025g
CaCl <sub>2</sub> ·2H <sub>2</sub> O	0.1g
Na <sub>2</sub> SeO <sub>3</sub> ·5H <sub>2</sub> O	0.3mg

2) Sterilize in autoclave at 121°C for 20 minutes.

## 2. Antibiotics

### 1. 1000×Streptomycin(150mg/mL):

Streptomycin	1.5g
ddH <sub>2</sub> O	10mL

Weigh 1.5g streptomycin, add 8mL ddH<sub>2</sub>O to fully dissolve it. Then add ddH<sub>2</sub>O to 10mL and sterilization by filtration using Acrodisc Syringe Filter(0.2µm Supor Membrane).

### 2. 1000× Ampicillin(100mg/mL)

Ampicillin	1.0g
ddH <sub>2</sub> O	10mL

Weigh 1.0g ampicillin, add 8mL ddH<sub>2</sub>O to fully dissolve it. Then add ddH<sub>2</sub>O to 10mL and sterilization by filtration using Acrodisc Syringe Filter(0.2µm Supor Membrane).

### 3. 1000×Kanamycin(50mg/mL)

Kanamycin	0.5g
ddH <sub>2</sub> O	10mL

Weigh 0.5g kanamycin, add 8mL ddH<sub>2</sub>O to fully dissolve it. Then add ddH<sub>2</sub>O to 10mL and sterilization by filtration using Acrodisc Syringe Filter(0.2µm Supor Membrane).

### 4. 1000× Chloramphenicol(30mg/mL)

Chloramphenicol	0.3g
Ethanol absolute	10mL

Weigh 0.3g chloramphenicol, add 8mL ethanol absolute to fully dissolve it. Then add ethanol absolute to 10mL and sterilization by filtration using Acrodisc Syringe Filter(0.2µm Supor Membrane).

## 3. 50×TAE

Tris base	242g
Na <sub>2</sub> EDTA·2H <sub>2</sub> O	37.2g
ice vinegar	57.1mL
ddH <sub>2</sub> O	800mL

Weigh 242g Tris base and 37.2g Na<sub>2</sub>EDTA·2H<sub>2</sub>O, add 800mL ddH<sub>2</sub>O to fully dissolve them, then add 57.1mL ice vinegar. Add ddH<sub>2</sub>O to 1L.

## 4. 75% ethanol

Ethanol absolute	750mL
ddH <sub>2</sub> O	250mL

Dosage of 750 mL of ethanol absolute, and then add ddH<sub>2</sub>O to 1L.

## 5. 5×SDS-PAGE electrophoretic buffer (1L):

Tris base	15.1g
Glycine	94g
SDS	5g

Firstly, dissolve them with 800mL ddH<sub>2</sub>O, and then add water to 1L.

**6. Destaining solution (1L):**

Methyl alcohol	250mL
Acetic acid	80mL
ddH <sub>2</sub> O	up to 1L

**7. 10mM ABTS:**

ABTS	27.434mg
ddH <sub>2</sub> O	up to 1mL

**8. 0.1M acetate buffer:**

NaAc	18g
CH <sub>3</sub> COOH	9.8mL
ddH <sub>2</sub> O	up to 1L

**9. 0.2M PBS**

NaH <sub>2</sub> PO <sub>4</sub> ·2H <sub>2</sub> O	2.6g
Na <sub>2</sub> HPO <sub>4</sub> ·12H <sub>2</sub> O	29g
ddH <sub>2</sub> O	500mL
Adjust the pH to 7.4	